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claims 1, 2 and 4 - 10

Claims

1. (amended) A ^{method}~~system~~¹ for the stimulation and production of a hydrocarbon containing substance from a location below the surface of the earth, where said location is in fluid communication, via a well casing, with said surface, said ^{method}~~system~~¹ comprising the steps of
- 5 a.) positioning a transducer mechanism within said well casing at said location, said mechanism comprising a plurality of axially, spaced apart, circular transducer elements, where said transducer elements are electrically arranged in parallel and electrically excitable to produce a high energy, narrow, radiation pattern of high energy impulses extending
- 10 laterally from said well casing into said location;
- b.) maintaining said transducer mechanism within an oil filled medium at a pressure essentially equal to the area in horizontal proximity to said mechanism; and,
- c.) energizing said transducer mechanism.
2. (amended) The ^{method}~~system~~¹ according to claim 1, wherein said high energy, radiation pattern is horizontally focused within a circular band of between 2 and 3 degrees.
4. The ^{method}~~system~~ according to claim 3, wherein said transducer elements are sealed within a pressure controlled housing.
5. The ^{method}~~system~~¹ according to claim 1, wherein said transducer mechanism is energized at a frequency of at least 20 kHz.

6. The ^{method}~~system~~ according to claim 1, wherein said well casing includes a series of through holes at said location to facilitate movement of said hydrocarbon containing substance into said well casing.

7. The ^{method}~~system~~ according to claim 3, wherein each said transducer element is a piezoelectric substance.

8. The ^{method}~~system~~ according to claim 7, wherein said piezoelectric substance is a ceramic.

9. The ^{method}~~system~~ according to claim 8, wherein said ^{transducer mechanism}~~system~~ is energized at a frequency of at least 20kHz.

10. The ^{method}~~system~~ according to claim 1, wherein adjacent said plural transducer elements are spaced apart by dielectric spacer members.

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